

SECTION C

This document covers cookies packaged in a polymeric tray for use by the Department of Defense as a component of operational rations.

C-1 ITEM DESCRIPTION

PACKAGING REQUIREMENTS AND QUALITY ASSURANCE PROVISIONS FOR CID A-A-20295B, COOKIES, PACKAGED IN POLYMERIC TRAY, SHELF STABLE

Types, styles, flavors, bake types, and classes.

Type I, Style G, Flavor 2, Bake type b, Class 2 – Chocolate Chip Macaroon Cookies, Regular, Soft and Chewy

Type I, Style J, Flavor 7, Bake type a, Class 2 – Peanut Butter With Chocolate Chips Cookies, Regular, Crisp

Type I, Style J, Flavor 9, Bake type a, Class 2 – Chocolate, Chocolate Chunk Cookies, Regular, Crisp

Type I, Style N, Bake type a, Class 2 – Chocolate Peanut Butter Chip Cookies, Regular, Crisp

Type I, Style O, Bake type a, Class 2 – Butterscotch Chip Cookies, Regular, Crisp

Packages.

Package E – Unitized Group Ration (UGR)

C-2 PERFORMANCE REQUIREMENTS

A. Product standard. A sample shall be subjected to first article (FA) or product demonstration model (PDM) inspection as applicable, in accordance with the tests and inspections of Section E of the Packaging Requirements and Quality Assurance Provisions. The approved sample shall serve as the Product Standard. Should the contractor at any time plan to, or actually produce the product using different raw material or process methodologies from the approved Product Standard, which result in a product non comparable to the Product Standard, the contractor shall arrange for a new or alternate FA or

PDM approval. In any event, all product produced must meet all requirements of this document including Product Standard comparability.

B. Shelf life. The packaged product shall meet the minimum shelf life requirement of 36 months at 80°F.

C. Odor and flavor. The packaged cookies shall be free from foreign odors and flavors.

D. Net weight.

(1) For Type I, Style G, Flavor 2, Bake type b, Class 2 – Chocolate Chip Macaroon Cookie, Regular, Soft and Chewy there shall be ~~25~~ 34 cookies per polymeric tray and no individual polymeric tray shall have a net weight of less than ~~47~~ 30 ounces.

(2) For all other cookies there shall be 27 cookies per polymeric tray and no individual polymeric tray shall have a net weight of less than 37 ounces.

E. Palatability and overall appearance. The finished product shall be equal to or better than the approved product standard in palatability and overall appearance.

F. Analytical Requirements.



(1) Oxygen content. The oxygen content of the filled and sealed polymeric tray shall not exceed 0.3 percent after 72 hours.

SECTION D

D-1 PACKAGING

A. Preservation. Twenty seven (27) or ~~twenty five (25)~~ thirty four (34) as specified, intact cookies plus the appropriate number of oxygen scavenger(s) shall be filled and sealed into polymeric trays and the trays shall conform to the requirements of section 3 of MIL-PRF-32004, Packaging of Food in Polymeric Trays, Type II Oven-baked Products. Verification testing and inspection of trays and lids shall be in accordance with Section 4 of MIL-PRF-32004 and the Quality Assurance Provisions of Section E of this document. The requirement for protective sleeves shall not apply to Type II Oven-baked Products.

B. Polymeric tray closure. The filled and sealed tray shall be securely closed.



C. Oxygen scavenger packet. The oxygen scavenger (absorber) shall be constructed of materials that are safe for direct or indirect food contact and shall be suitable for use with edible products. The oxygen scavenger (absorber) shall be in compliance with all applicable FDA and USDA regulations.

D-2 LABELING

A. Polymeric tray body. The polymeric tray body shall be clearly printed or stamped, in a manner that does not damage the tray, with permanent ink of any contrasting color, which is free of carcinogenic elements. One end of the polymeric tray (see figure 1 of MIL-PRF-32004) shall be marked with the product name and number of portions. If the tray body end markings are not readily legible in low light conditions, a small, easily legible label shall be applied, but not over any existing tray markings. All other markings may be applied along the tray body side. The product name, lot number and filling equipment number shall be applied at the time of tray sealing. 1/

Tray body markings shall include:

(1) Product name. Commonly used abbreviations may be used when authorized by the inspection agency.

(2) Tray code includes: 2/
Lot Number

1/ As an alternate method, tray body markings may be clearly printed or stamped onto the polymeric tray lid at the time of tray sealing, in a manner that does not damage the lid, with permanent ink of any contrasting color, which is free of carcinogenic elements, provided that the required markings are applied onto the tray body prior to packing for shipment to ration assembler.

2/ The lot number shall be expressed as a four digit Julian code. The first digit shall indicate the year of production and the next three digits shall indicate the day of the year (Example, 27 February 2004 would be coded as 4058). The Julian code shall represent the day the product was packed into the tray and the tray sealed. Sublotting (when used) shall be represented by an alpha character immediately following the four digit Julian code. Following the four digit Julian code and the alpha character (when used), the other required code information shall be printed in the sequence as listed above.

B. Polymeric tray lid. The lid shall be clearly printed or stamped, in a manner that does not cause damage. Permanent ink of any contrasting color, which is free of carcinogenic

elements, shall be used. As an alternate labeling method, a pre-printed self-adhering 0.002 inch thick clear polyester label printed with indelible contrasting color ink may be used.

- (1) Lid labeling shall include:
- Product name and flavor
 - Ingredients
 - Net weight
 - Name and address of manufacturer

TO OPEN: Using a clean knife, cut the lidding around the inside perimeter of the tray seals.

SUGGESTION: Cut lid along 3 sides and fold over uncut portion. Fold back to keep unused portions protected.

- (1) For Type I, Style G, Flavor 1, Bake type b, Class 2 – Chocolate Chip Macaroon Cookie, Regular, Soft and Chewy yield statement shall be as follows:

YIELD: Serves 25 **17** portions of ~~1 cookie~~ **2 cookies** each.

- (2) For all other cookies yield statement shall be as follows:

YIELD: Serves 27 portions of 1 cookie each.

D-3 PACKING

A. Packing for shipment to ration assembler. Four filled, sealed and processed polymeric trays shall be packed in a snug fitting fiberboard box conforming to style RSC-L, type CF, grade 275 of ASTM D5118/D5118M-95(2001) Standard Practice for Fabrication of Fiberboard Shipping Boxes. The trays shall be stacked with lids oriented upright. Fiberboard pads shall be placed between the trays and on the top and bottom of the stacked trays. The pad dimensions shall be not less than 1/8 inch of the full length and width inside dimensions of the box and shall be fabricated of class domestic, grade 275 fiberboard. The box shall be closed in accordance with ASTM D1974-98 Standard Practice for Methods of Closing, Sealing, and Reinforcing Fiberboard Boxes.

D-4 UNITIZATION

A. Unit loads. Unit loads shall be as specified in DSCP FORM 3507, Loads, Unit: Preparation of Semipерishable Subsistence Items.

D-5 MARKING

A. Shipping containers and unit loads. Marking of shipping containers and unit loads shall be as specified in DSCP FORM 3556, Marking Instructions for Boxes, Sacks and Unit Loads of Perishable and Semiperishable Subsistence.

SECTION E INSPECTION AND ACCEPTANCE

The following quality assurance criteria, utilizing ANSI/ASQC Z1.4-1993, Sampling Procedures and Tables for Inspection by Attributes, are required. Unless otherwise specified, Single Sampling Plans indicated in ANSI/ASQC Z1.4-1993 will be utilized. When required, the manufacturer shall provide the certificate(s) of conformance to the appropriate inspection activity. Certificate(s) of conformance not provided shall be cause for rejection of the lot.

A. Definitions.

(1) Critical defect. A critical defect is a defect that judgment and experience indicate would result in hazardous or unsafe conditions for individuals using, maintaining, or depending on the item; or a defect that judgment and experience indicate is likely to prevent the performance of the major end item, i.e., the consumption of the ration.

(2) Major defect. A major defect is a defect, other than critical, that is likely to result in failure, or to reduce materially the usability of the unit of product for its intended purpose.

(3) Minor defect. A minor defect is a defect that is not likely to reduce materially the usability of the unit of product for its intended purpose, or is a departure from established standards having little bearing on the effective use or operation of the unit.

B. Classification of inspections. The inspection requirements specified herein are classified as follows:

(1) Product standard inspection. The first article or product demonstration model shall be inspected in accordance with the provisions of this document and evaluated for overall appearance and palatability. Any failure to conform to the performance requirements or any appearance or palatability failure, shall be cause for rejection of the lot. The approved first article or product demonstration model shall be used as the product standard for periodic review evaluations. All food components that are inspected by the USDA shall be subject to periodic review sampling and evaluation. The USDA shall select sample units during production of contracts and submit them to the following address for evaluation:

US Army Research, Development and Engineering Command
 Natick Soldier Center
 AMSRD-NCS-CF-F
 15 Kansas Street
 Natick, MA 01760-5018

One lot of each item produced shall be randomly selected during each calendar month of production. Two (2) sample units shall be randomly selected from that one production lot. The two (2) sample units shall be shipped to Natick within five working days from the end of the production month and upon completion of all USDA inspection requirements. The sample units will be evaluated for the characteristics of appearance, odor, flavor, texture and overall quality.

(2) Conformance inspection. Conformance inspection shall include the product examination and the methods of inspection cited in this section.

E-5 QUALITY ASSURANCE PROVISIONS (PRODUCT)

A. Product examination. The finished product shall be examined for compliance with the performance requirements in A-A-20295B and specified in Section C of this Packaging Requirements and Quality Assurance Provisions document utilizing the double sampling plans indicated in ANSI/ASQC Z1.4 - 1993. The lot size shall be expressed in polymeric trays. The sample unit shall be the contents of one tray. The inspection level shall be S-3 and the acceptable quality level (AQL), expressed in terms of defects per hundred units, shall be 4.0 for major defects and 6.5 for minor defects. The filled and sealed polymeric trays shall be brought to room temperature (65°F to 75°F).

TABLE I. Product defects 1/ 2/

Category		Defect
<u>Major</u>	<u>Minor</u>	<u>General</u>
101		Product not type, style, flavor, bake type, class as specified.
102		Evidence of excessive baking (materially darkened or scorched).
103		Polymeric tray does not contain intact oxygen scavenger(s) packet.
104		Crushed cookie(s). <u>3/</u>

TABLE I. Product defects 1/ 2/ continued



Category		Defect
<u>Major</u>	<u>Minor</u>	
	201	Broken cookie(s). <u>4/</u> <u>Type I, style G, flavor 2, bake type b, class 2</u>
	202	Chocolate chip macaroon(s) not light tan to light brown in color with coconut flakes.
	203	Chocolate chip macaroon(s) not soft or not moist with flakes of coconut.
105		Chocolate chip macaroon(s) not a creamy, sweet, distinct coconut flavor with chocolate chips.
	204	Chocolate chip macaroon(s) does not have a uniform distribution of dark chocolate chunks.
	205	Less than 25 34 cookies per tray.
	206	Net weight of an individual polymeric tray less than 47 30 ounces. <u>Type I, style J, flavor 7, bake type a, class 2</u>
	207	Peanut butter chocolate chip cookie(s) not beige color with a slightly cracked surface.
106		Peanut butter  colate chip cookie(s) not peanut butter with sweet chocolate odor or flavor.
	208	Peanut butter chocolate chip cookie(s) not crispy, crunchy, or not slightly crumbly with a firm bite. 
	209	Peanut butter chocolate chip cookie(s) does not have a uniform distribution of chocolate chips.

TABLE I. Product defects 1/ 2/ continued

Category		Defect
<u>Major</u>	<u>Minor</u>	
		<u>Type I, style J, flavor 9, bake type a, class 2</u>
	210	Chocolate chocolate chunk cookie(s) not milk chocolate color with cracked surface or round shape.
107		Chocolate chocolate chunk cookie(s) not milk chocolate odor or flavor.
	211	Chocolate chocolate chunk cookie(s) not crispy, crunchy, or not slightly crumbly with a firm bite.
	212	Chocolate chocolate chunk cookie(s) does not have a uniform distribution of dark chocolate chunks.
		<u>Type I, style N, bake type a, class 2</u>
	213	Chocolate peanut butter chip cookie(s) not milk chocolate color with cracked surface or not round shape.
108		Chocolate peanut butter chip cookie(s) not milk chocolate with peanut butter chips odor or flavor.
	214	Chocolate peanut butter chip cookie(s) does not have a uniform distribution of peanut butter chips.
	215	Chocolate peanut butter chip cookie(s) not crispy or not firm.
		<u>Type I, style O, bake type a, class 2</u>
	216	Butterscotch chip cookie(s) not golden color with a slightly cracked surface or not round shape.
109		Butterscotch chip cookie(s) not sweet butterscotch odor or flavor.
	217	Butterscotch chip cookie(s) does not have visible dark gold colored butterscotch chips.
TABLE I. <u>Product defects 1/ 2/ continued</u>		

Category	Defect
<u>Major</u>	<u>Minor</u>
	218 Butterscotch chip cookie(s) not firm, crispy, crunchy, or not slightly crumbly.
	<u>Weight</u> <u>5/</u>
	219 Net weight of an individual polymeric tray less than 37 ounces.
	220 Less than 27 cookies in a tray.

1/ Presence of any foreign materials such as, but not limited to, dirt, insect parts, hair, wood, glass, metal or mold, or any foreign odors or flavors such as, but not limited to burnt, scorched, rancid, sour, or stale or foreign color shall be cause for rejection of the lot.

2/ Finished product not equal to or better than the approved product standard in palatability and overall appearance shall be cause for rejection of the lot.

3/ Thirty (30) grams of cookie crumbs, i.e., not discernible pieces, per polymeric tray.

4/ More than half the cookies broken into three or more pieces.

5/ Applies to all other varieties of cookies except type I, style G, flavor 2, bake type b, class 2 – chocolate chip macaroon cookie, regular, soft and chewy.

B. Methods of inspection.

(1) Shelf life. The contractor shall provide a certificate of conformance that the product has a 3 year shelf life when stored at 80°F. Government verification may include storage for 6 months at 100°F or 36 months at 80°F. Upon completion of either storage period, the product will be subjected to a sensory evaluation panel for appearance and palatability and must receive an overall score of 5 or higher based on a 9 point hedonic scale to be considered acceptable.

(2) Net weight. The net weight of the filled and sealed polymeric tray shall be determined by weighing each sample unit on a suitable scale tared with a representative empty tray, appropriate number of oxygen scavengers, and lid. Results shall be reported to the nearest 1 ounce.

(3) Oxygen content testing. Eight filled and sealed polymeric trays shall be randomly selected from one production lot and individually tested for oxygen content in accordance

with any USDA approved test method. Testing shall be accomplished after the filled and sealed polymeric trays have been allowed to equilibrate at room temperature for not less than 72 hours from the time of sealing. Test results shall be reported to the nearest 0.01 percent. Verification will be conducted through actual testing by a Government laboratory. Any individual result not conforming to the oxygen content requirement shall be cause for rejection of the lot.

E-6 QUALITY ASSURANCE PROVISIONS (PACKAGING AND PACKING MATERIALS, POLYMERIC TRAY)

A. Packaging and labeling.

(1) Polymeric tray testing. For purposes of clarification, the polymeric tray without the lid will be referred to as the “tray” and the polymeric tray with the lid shall be referred to as the “container”. The container and container materials shall be examined for the characteristics listed in table I of MIL-PRF-32004, Packaging of Food in Polymeric Trays. The lot size, sample unit, and inspection level criteria are provided in table II below for each of the test characteristics. Any test failure shall be classified as a major defect and shall be cause for rejection of the lot. For rough handling survivability at frozen temperature, polymeric tray survival rate shall be at least 85 percent.

TABLE II. Polymeric tray quality assurance criteria

Characteristic	<u>Prior to processing</u>		
	Lot size expressed in	Sample unit	Inspection level
Tray configurations and dimensions	Trays	1 tray	S-1
Oxygen gas transmission rate of tray	Trays	1 tray	S-1
Oxygen gas transmission rate of lid	Yards	1/2 yard	S-1
Water vapor transmission rate of tray	Trays	1 tray	S-1
Water vapor transmission rate of lid	Yards	1/2 yard	S-1
Camouflage	Containers	1 container	S-1

TABLE II. Polymeric tray quality assurance criteria continued

**PKG & QA (POLYMERIC)
A-A-20295B
27 February 2004
W/CHANGE 01 26 May 04**

Characteristic	<u>After processing</u>		
	Lot size expressed in	Sample unit	Inspection level
Processing	Trays	1 tray	S-2
Rough handling survivability	Test containers	1 container	S-2
Headspace (vacuum)	Containers	1 container	S-1
Closure seal	Containers	1 container	S-1
Internal pressure	Containers	1 container	S-1
Lid opening	Containers	1 container	S-1

(2) Examination of container. The container shall be examined for the defects listed in table II of MIL-PRF-32004 and the labeling defects listed in table III below. The lot size shall be expressed in containers. The sample unit shall be one processed and labeled container. The inspection level shall be I and the AQL, expressed in terms of defects per hundred units, shall be 0.65 for major A defects, 2.5 for major B defects and 4.0 for minor defects. Fifty sample units shall be examined for critical defects. The finding of any critical defect shall be cause for rejection of the lot.

TABLE III. Container labeling defects

Category		Defect
<u>Major A</u>	<u>Minor</u>	
101		Polymeric tray lid or body labeling missing, incorrect or illegible.
	201	When a pre-printed self-adhering label is used, the label not adhering to tray lid (for example, label raised or peeled back from edge to corner) or presence of any areas of gaps along the perimeter of the label where the label is not properly adhered.

(3) Label adhesive examination. When self-adhering labels are used, the adhesive shall be tested in accordance with ASTM D3330/D3330M-00, Standard Test Method for Peel Adhesion of Pressure Sensitive Tape. In lieu of testing, a certificate of conformance (COC) shall be provided.

B. Packing.

(1) Shipping container and marking examination. The filled and sealed shipping containers shall be examined for the defects listed in table IV below. The lot size shall be expressed in shipping containers. The sample unit shall be one shipping container fully packed. The inspection level shall be S-3 and the AQL, expressed in terms of defects per hundred units, shall be 4.0 for major defects and 10.0 for total defects.

TABLE IV. Shipping container and marking defects

Category		Defect
<u>Major</u>	<u>Minor</u>	
101		Marking omitted, incorrect, illegible, or improper size, location sequence or method of application.
102		Inadequate workmanship. <u>1/</u>
	201	Arrangement or number of polymeric trays not as specified.

1/ Inadequate workmanship is defined as, but not limited to, incomplete closure of container flaps, loose strapping, inadequate stapling, improper taping, or bulged or distorted container.

C. Unitization.

(1) Unit load examination. The unit load shall be examined in accordance with the requirements of DSCP FORM 3507, Loads, Unit: Preparation of Semiperishable Subsistence Items. Any nonconformance shall be classified as a major defect.

SECTION J REFERENCE DOCUMENTS

DSCP FORMS

DSCP FORM 3507	Loads, Unit: Preparation of Semiperishable Subsistence Items
DSCP FORM 3556	Marking Instructions for Boxes, Sacks and Unit Loads of Perishable and Semiperishable Subsistence

MILITARY SPECIFICATIONS

MIL-PRF-32004	Packaging of Food in Polymeric Trays
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GOVERNMENT PUBLICATIONS

Federal Food, Drug, and Cosmetic Act and regulations promulgated thereunder
(21 CFR Parts 1-199) and (9 CFR Parts 1-391)

NON-GOVERNMENTAL STANDARDS

AMERICAN SOCIETY FOR QUALITY (ASQ)

ANSI/ASQCZ1.4-1993 Sampling Procedures and Tables for Inspection by Attributes

ASTM INTERNATIONAL

D1974-98	Standard Practice for Methods of Closing, Sealing, and Reinforcing Fiberboard Boxes
D3330/D3330M-00	Standard Test Method for Peel Adhesion of Pressure-Sensitive Tape
D5118/D5118M-95 (2001)	Standard Practice for Fabrication of Fiberboard Shipping Boxes

**PKG & QA (POLYMERIC)
A-A-20295B
27 February 2004
W/CHANGE 01 26 May 04**

SUBJECT: ES04-075; Document Changes; A-A-20295B Cookies, Packaged in a Polymeric Tray, Packaging Requirements and Quality Assurance Provisions (PKG&QA); Sterling Foods; UGR 05 contract; a smaller size chocolate chip macaroon cookie is produced

Date received: 24 May 04

Date due: ASAP

Date replied: 26 May 04

1. Sterling Foods contacted Natick and informed them that the initial size and packing of the chocolate chip macaroon cookie from Feb 2004 is no longer possible. A smaller cookie will be packed.

2. The following changes are highlighted in the attached file.

Sec C-2, D (1): Line 2 (cookies) - delete "25" and insert "34"; line 3 ounces) - delete "47" and insert "30"

Sec D-1, A: Line 1 - delete " twenty five 25" and insert "thirty four 34"

Sec D-2, Yield: - delete "25" and insert "17" and delete "1 cookie" and insert "2 cookies"

Sec E-5, Table I: Defect 205 - delete "25" and insert "34"

Sec E-5, Table I: Defect 206 - delete "47" and insert "30"

3. Natick recommends that DSCP implement the changes with a contract modification for the current, pending and future procurements until the subject document is formally amended or revised.

1 Encl

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PKG & QA (POLYMERIC)
A-A-20295B
27 February 2004
W/CHANGE 01 26 May 04

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M Acheson
R Valvano
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M Friel
E Haldeman
C Norton
B Spencer

L Dyduck
L Salerno